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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/768,697	01/23/2001	Shlomo Shlafman	6727/11204US1	3714
7590		12/28/2007	EXAMINER	
S. Peter Ludwig		GREENE, DANIEL LAWSON		
Darby & Darby P.C.		ART UNIT		
805 Third Avenue		PAPER NUMBER		
New York, NY 10022		3694		
MAIL DATE			DELIVERY MODE	
12/28/2007			PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

09/768,697

**Applicant(s)**

SHLAFMAN ET AL.

**Examiner**

Daniel L. Greene Jr.

**Art Unit**

3694

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 8/3/2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-14,17-22,25-30,33-44,47 and 48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-14,17-22,25-30,33-44,47 and 48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. The notice of abandonment mailed 9/26/2006 is hereby vacated for reasons set forth in the 12/21/2006 interview with Mr. James Trammell.
2. The 1/13/2006 37 CFR 1.105 requirement is considered satiated and is therefore withdrawn.
3. An action on the merits of 1, 4-14, 17-22, 25-30, 33-35, 38-44 and 47 follows.

### ***Claim Objections***

4. Claim 1 is objected to because of the following informalities: As a method claim, each limitation of the claim must start with an active verb. For example the second limitation of claim 1 should start with either using a computer to calculate, or calculating with a computer. The third limitation should start with recalculating the density function, based on the density function... Etc. All dependent claims that further define independent claim 1 should also utilize active method language, see for example, claim 19, etc. Appropriate correction is required.
5. Claim 34 is objected to because of the following informalities: it appears the word "to" is missing between "adapted" and "compute" to read "adapted to compute". Appropriate correction is required.

### ***Response to Amendment***

6. Applicant's amendments to the claims have overcome the 35 USC 101 rejection set forth in section 1 of the previous Office action mailed 5/6/2005.

7. Applicant's amendments to the claims have also obviated the 35 USC 112 rejections set forth in section 2 of said previous Office action.

**The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.**

***Claim Rejections - 35 USC § 103***

8. **Claims 1-4, 22-26 and 35-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tucker et al., The Probability Distribution of Foreign Exchange Price Changes for the reasons set forth in section 4 of the previous office action mailed 5/6/2005.**

Tucker clearly discloses claims 1, 22 and 35 i.e. a computer-implemented method, apparatus and software for trading in a financial derivative of an underlying asset, comprising: determining a trend of a stochastic process, which is predictive of a future value of the asset and a predicted variance of the future value; responsive to the trend and the variance, numerically calculating, using a computer, a density function indicative of a probability distribution of the value at a first time in the future; based on the density function at the first time, recalculating the density function by integrating a random variable representative of the stochastic process over the density function at the first time to find the probability distribution of the value at a second time, subsequent to the first time; and computing at least one of an expected value of the asset and an expected

yield of the financial derivative based on the recalculated density function as a basis for making a trading decision with regard to the derivative of the asset based on the density function.

***Allowable Subject Matter***

9. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 5 would also need to have the actual delta functions/equations written into the claim language to overcome the prior art.

10. Claims 22 and 35 which mirror the method of claim 1 as apparatus and software respectively would also need to have the limitations from claims 4 and 5 modified and added to them to make them allowable.

11. The following is a statement of reasons for the indication of allowable subject matter: None of the prior art of record discloses or makes obvious the use of the combination of elements and equations set forth in claims 5, 4 and 1 including but not limited to a convex superposition of the specific mutually translated delta functions disclosed in for example, page 13 of the specification.

12. This statement is not intended to necessarily state all the reasons for allowance or all the details why the claims are allowed and has not been written to specifically or impliedly state that all the reasons for allowance are set forth (MPEP 1302.14).

***Conclusion***

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

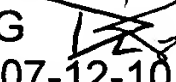
14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel L. Greene Jr. whose telephone number is (571) 272-6876. The examiner can normally be reached on Mon-Thur.

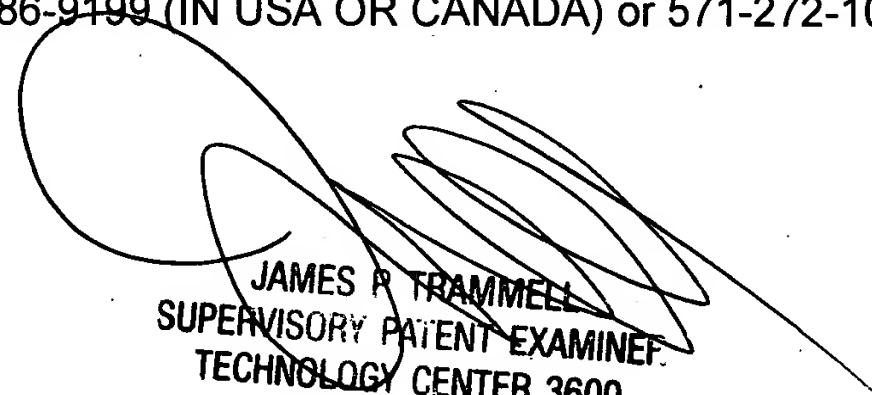
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James P. Trammell can be reached on (571) 272-6712. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DIG   
2007-12-10

  
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